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## JOURNAL OF THE STATISTICAL SOCIETY,

DECEMBER, 1869.

INAUGURAL ADDRESS *on the* PROGRESS *and* PRESENT CONDITION  
of STATISTICAL INQUIRY, *delivered at the* SOCIETY'S ROOMS,  
12, St. James's Square, London, on TUESDAY, 16th November,  
1869. By the PRESIDENT, WILLIAM NEWMARCH, F.R.S.

In the original prospectus or statement of objects, dated 23rd April, 1834, and signed Henry Hallam, Charles Babbage, Richard Jones, and John Elliott Drinkwater, in pursuance of which the Statistical Society of London was founded, it is stated as follows:—

“The Society has been established for the purpose of procuring, arranging, and publishing ‘Facts calculated to illustrate the conditions and prospects of Society,’ \* \* \* The whole subject was considered by the Statistical Section of the British Association at Cambridge (in August, 1833), as admitting a division into four great classes: (A) *Economical Statistics*, comprehending (1) the Statistics of the natural productions and the agriculture of nations; (2) of manufacture; (3) of commerce and currency; (4) of the distribution of wealth, and all facts relating to wages, profits, &c.—(B) *Political Statistics*, consisting of three subdivisions: (1) the facts relating to the elements of political institutions, the number of electors, jurors, &c.; (2) Legal Statistics; (3) the statistics of finance and of national expenditure, and of civil and military establishments.—(C) *Medical Statistics*, strictly so called, will require at least two subdivisions, and the great subject of Population, although it might be classed elsewhere, yet touches medical statistics on so many points that it would be placed most conveniently perhaps in this division, and would constitute another subdivision.—(D) *Moral and Intellectual Statistics*, which comprehend, (1) the statistics of literature; (2) of education; (3) of religious instruction and ecclesiastical institutions; (4) of crime. Although fourteen subdivisions have now been enumerated, it is probable that more will be required.”

The meaning of this outline will be rendered plainer by the following two passages from the “Introduction,” dated May,

1838, prefixed to the first volume of the quarterly *Journal* of the Society:—

“Like other sciences, that of Statistics seeks to deduce from well established facts certain general principles which interest and affect mankind: it uses the same instruments of comparison, calculation, and deduction; but its peculiarity is that it proceeds wholly by the accumulation and comparison of facts, and does not admit of any kind of speculation: it aims, like other sciences, at truth, and advances *pari passu* with its development.”

And then, in illustration of the applicability of the principle here stated, the following statement is made:

“The Statist commonly prefers to employ figures and tabular exhibitions, because facts, particularly when they exist in large numbers, are most briefly and clearly stated in such forms; and because he is not satisfied with giving deductions, which admit of question, but supplies the materials which each individual may himself examine and compare. It is not however true, that the Statist rejects all deductions, or that statistics consists merely of columns of figures. It is simply required that all conclusions shall be drawn from well-attested data, and shall admit of mathematical demonstration.”

We have here very distinctly set out the three fundamental rules, which for thirty-five years have been carefully observed in the proceedings of the Society, and in determining the contents of the thirty-two volumes of its *Journal*, viz.:—

- I. The collection of facts relating to Man in Society.
- II. The verification, arrangement, and exhibition of these facts in their most natural and lucid order.
- III. The exclusion of all speculations and deductions not directly authorised by the evidence so procured.

It has been said, I know, in many quarters, that we are restricted by the conditions of our pursuit to mere columns of figures, and that theories and opinions are wholly beside our objects and purpose. The answer is short and simple, namely, that Statistics in this matter is precisely in the same circumstances as Mechanics or Chemistry;—that is to say, that in interpreting facts it employs, where needful, the methods of trial and conjecture which are permitted in all sciences of observation.

The Prospectus of 1834 (drawn up, I have reason to believe, by Mr. Hallam), points out, it will be observed, with fitting caution, that “although fourteen subdivisions of inquiry are enumerated in it, it is probable that more will be required.” More have been required. After a whole generation of active work and energetic discussion, any attempt now to classify and arrange the field of

statistical inquiry would be vastly more elaborate than the four-fold division of Economical, Political, Medical, and Moral Statistics which occupied the minds of our founders in 1834.

At that time no reference could be made to any country but our own, for foreign Governments and Legislatures, with perhaps two or three partial exceptions, had not arrived at even the faintest notion of the desirableness of systematic statistical evidence. During the last twenty-five years this state of things has almost disappeared, and in several foreign States there are now in full activity Statistical Departments, and a vigour of statistical research by independent persons, which almost reduces the United Kingdom to a second place. Speaking for ourselves, however, we may put forward the following enumeration of subjects of inquiry as regards which we have already arrived at results so positive and clear that they have passed by general assent into the order of established scientific truths,—and I so frame the list as to graduate from top to bottom the degree of success attained:—

1. Vital Statistics, including Births, Marriages, Deaths, Diseases, and Epidemics.
2. Census Statistics, including the races, occupations, ages, social condition, and distribution of the people.
3. Statistics of Pauperism, Police, and Crime.
4. Fiscal and Financial Statistics—taxation, funding, Savings Banks, Currency, and Life Assurance.
5. Statistics of Conveyance, including Railways, Steam-vessels, and Public Carriages.
6. Trade Statistics, both as regards foreign and inland commerce and navigation.
7. Statistics of Education, both primary, intermediary, and collegiate.
8. Statistics of the cost and effects of Central and Local Government, including the maintenance of Armed Forces of all kinds.

If I am right in the adjustment of this order of precedence, and I think I am, the results are suggestive.

Under the three first heads of Vital and Census Statistics, and Statistics of Pauperism and Crime, we are in this country at present in advance of all other communities. We have attained to scientific completeness and precision in:—

(1). The extent and variety of the observations made. (2). In their authentic character. (3). In the uniform methods of their collection. (4). In the natural and lucid order of their exhibition. (5). And in the rigid manner in which the deductions are kept close to the facts.

By virtue of this method of investigation—and let me again remind you that it is neither more nor less than the Baconian rule extended from the purely physical to the mixed-mathematical fields of research—we have arrived at certain Ultimate Units in vital statistics; for example, we know as a matter of absolute certainty that, in ordinary years, the rate of mortality in England and Wales is 22·48 per 1,000 per annum of the mean population of the year; that the marriage-rate is 16·92 per 1,000, and the birth-rate 35·34 per 1,000.

By means of at least two Censuses, 1851 and 1861, taken under the advice and supervision of our fellow-members, Dr. Farr and Mr. Hammick, we are put in possession of a series of similar Ultimate Units as regards ages, the proportions of the sexes, the conjugal condition, the occupations and geographical distribution of the people. The periodical Reports also of the Factory and other Commissioners present most valuable evidence relating to different kinds of employments of the working classes.

In like manner, as regards Pauperism, the systematic labours of the Poor Law Board, since its formation, more than thirty years ago, have enabled us to state with precision the ratios, character, origin, and cost of Pauper relief in every part of England and Wales; and of late years the intelligence of our fellow-member, Mr. Purdy, as head of the Statistical Office of the Poor Law Department, have led to many improvements and extensions of the information collected and published.

We also, I think, justly claim superiority over any other country as respects the fourth division, viz., Fiscal and Financial Statistics, including Taxation, Funding, Savings Banks, Currency, and Life Insurance. The successful application by our deceased Vice-President, Thomas Tooke, of the statistical method in the proof and development of his doctrines regarding the causes which determine the course of prices, the fluctuations of the bank note circulation, and the state of credit is, beyond doubt, one of the achievements of which we have most reason to be proud. Fifty years ago, when Mr. Tooke published the early volumes of the “History of Prices,” statistical materials were scanty and of difficult access. But the enlarged and accumulated evidence which every year supplies has only confirmed the soundness of his conclusions; and at this very moment, the Report presented by the Commission, appointed nearly five years ago by the French Government to investigate fully the range of questions relating to banking and credit institutions, announces results which are identical with those which will ever be associated with Mr. Tooke’s name and writings.\*

\* “Enquête sur les Principes et les faits généraux qui régissent la Circulation monétaire et fiduciaire.” Paris. Ministère des Finances. Evidence and Report

We have of late years amassed immense materials relating to the fiscal financial policy and changes of this and other countries. The public discussions on the subject of the Income Tax have contributed largely to this result. Within the last two years the publications of Mr. Dudley Baxter on the taxation of the United Kingdom have been marked by originality and great command of statistical data. Still I do not think that there has recently appeared in England any book on taxation so thoughtful and so well informed from so many sources as the works of the eminent French economist and statist, M. de Parieu.\*

England is the native land of Life Insurance, and principally by means of our friends and co-occupants of these rooms, the Institute of Actuaries, the pre-eminence of this island as the foremost authority on the theory and practice of Life Insurance, has been honorably maintained.

Under the fifth head of Conveyance, especially Railway Conveyance, we have amassed abundant materials, but almost the last scientific analysis and discussion of the facts was Dr. Lardner's book which appeared more than twenty years ago and is of course now entirely out of date. In saying this I am not insensible of the exhaustive nature of the discussions which have taken place at intervals on particular points of Railway Economy, and especially of the evidence collected and considered by the Commission under the Duke of Devonshire, which sat in 1865-67.

The sixth division refers to the Statistics of Trade and Navigation, Inland and Foreign. Latterly it has become the fashion to decry the periodical returns issued by the Statistical Office of the Board of Trade, and it seems to me somewhat prematurely and without sufficient knowledge of the nature of the case. I do not say that our periodical returns of the course of the Foreign Trade of the country are not susceptible of large improvement; but I do say, most emphatically, that there is no single branch of our Public Statistics in which more considerable improvement, both in form and compass has taken place during the last twenty-five or twenty years. The incessant alterations and reductions of our tariff and the consequent changes in the revenue offices, to say nothing of the constant changes in the course and direction of commerce itself, have entailed great difficulties in the maintenance of uniform statistical records. There have been and are considerable defects in the detailed modes of collecting and verifying the

7 volumes. 1865-69. The Commission examined orally, and received written replies from more than a hundred individuals, Corporations, and Chambers of Commerce, in France and other countries.

\* "*Traité des Impôts considérés sous le rapport Historique, Economique et Politique en France, et à l'Etranger;*" par Esquiros de Parieu. Paris. 1867.

original entries which form the basis of all subsequent totals, and until these defects are overcome there will be contradictions and discrepancies. But the frame-work of our system is entitled to high commendation, and should not be disturbed except after full and public enquiry. The Official Trade Statistics of the country are to be improved only as all other things are improved—not by abolishing or enfeebling the machinery, but by accelerating its action and enlarging its power. Let us however do full justice to the growing value of the periodical reports on the trade and industry of foreign countries furnished by British Consuls and Secretaries of Legation serving abroad. These reports have now been published for eight or nine years and the collection includes not a few Papers of the very highest merit and excellence. It would greatly add to the value of the series if the two sets of reports could be combined and could appear regularly on the first of each month.

Let us also do justice to the admirable series of returns prepared under the care of Mr. Donnelly, the Registrar-General of Ireland, of the Agricultural and Live Stock produce of that country. The system of a highly instructed Police Force which prevails in Ireland, enables the Executive there, to collect information quite beyond our reach in England.

In the matter of Education (seventh division), we have, and we have not, reason to congratulate ourselves on the issue of many efforts to ascertain the two facts of (1), the extent to which primary education is being applied to children of the working and poorer classes; and (2), the number of such children who are still wholly or mainly left uneducated. The contention of rival parties, sects, societies, and leagues has most effectually obscured the subject, and beyond the happy certainty that in one form or another popular education of some kind, becomes more general every year, we are really unable to give the precise statistics of the fact, whether for the country as a whole or for any particular parts of it. There are strong symptoms however of the speedy arrival of a different state of things.

Facts relating to the cost and effect of the Central and Local Government of a country, and to the cost and effect of the maintenance of armed forces, have, during the last ten or twelve years become a subject of prominent interest in this and other countries. The old vague violent declamation against placemen and expenditure has lost its attractiveness, and specifically, because it was vague and devoid of accuracy and instances. But the pressure of taxation, and the obvious burdens, both fiscal and economical, entailed by conscriptions and standing armies, have in a wholesome manner sharpened curiosity on every topic connected with the cost

of Government and military organisation. This is the topic which occupies the popular branches of the Legislature in all the Continental States—Austria, Hungary, Prussia, Holland, the smaller German kingdoms, and even in France, with the earliest restoration there of parliamentary control. With ourselves the inquiry is only beginning. The Military and Naval Estimates are still obscure and difficult. The cost of Colonial defence; the cost in men and treasure of the Indian Army of occupation; the expense of Courts of Justice, and of the Judicial system they represent; the cost and efficiency in the changed circumstances of the country of the higher offices of administration—are all subjects on which we only are beginning to collect facts; and it may be safely added, are all subjects not to be safely treated until the facts have been collected.

I have now stated the branches of inquiry in which in this country we have made decisive and gratifying progress during the last thirty-five years. It is plain, however, that as regards the last half of the eight divisions I have set forth, we cannot regard our progress hitherto as more than the foundation of scientific knowledge to be arrived at hereafter in a complete form.

Let me now state what appear to me to be the fields of statistical research which in this country most require early attention. They are the following:—

1. The annual consumption per head among different classes, and by the nation, as a whole, of the chief articles of food—corn, butchers' meat, tea, coffee, sugar, tobacco, wine, spirits, and beer.
2. The annual production in agriculture, minerals, metals, ships, and manufactures.
3. The comparative wages, house-rent, and cost of living in different parts of the country.
4. The total annual income and earnings and the total annual accumulations of different classes, and of the country, as a whole.
5. The relative taxation of different classes in this country, as compared with the same classes in those foreign countries, the competition of which England has to understand and meet—carefully attending in the inquiry to the comparative merits of Direct and Indirect taxation.
6. The financial and economical cost and burdens entailed by extensive warlike Armaments.
7. Periodical statistics of Public Hospitals in the Metropolis and the larger towns, with a view to a comparison of the efficiency and cost of the relief afforded in each.
8. Periodical returns of the income and operations of Charitable Trusts and Endowments, for relief and education.



9. A statistical ascertainment of the numerical strength of the different Religious churches and sects.

10. Statistical Evidence of the cost to the community in sickness, excessive mortality, and poor-rate expenditure of defective dwellings, and sanitary regulations.

11. Statistical Evidence of the gain to the community of instruction in popular schools in the rudiments of political economy, in the commoner industrial arts, and in military exercises.

12. Statistical Evidence of the consequences in this country of the Emigration from it.

13. Investigations relative to the advantages and cost to this country of the occupation of India.

14. An investigation on grounds of fact of the effect of Commercial Treaties, especially of the French Treaty of 1860.

15. A similar investigation of the consequences produced in the United States by the rigid system of protective Tariffs.

16. And by the protracted suspension of specie payments.

17. Statistical inquiries relative to the effects produced in Europe on commerce, accumulation, invention, prices, and the rate of interest, by the Gold Discoveries in California and Australia.

18. Investigations of the mathematics and logic of Statistical Evidence; that is to say, the true construction and use of Averages, the deduction of probabilities, the exclusion of superfluous integers, and the discovery of the laws of such social phenomena as can only be exhibited by a numerical notation.

These eighteen groups of subjects extend over a large surface, and the lapse of years and the intelligence and zeal of a phalanx of workers will be required to master them. But the work will be done sooner or later; and all the sooner, after we have once for all satisfied ourselves of its necessity.

Let us consider more in detail some of the topics proposed.

First, as regards the accurate statistical determination of the Average Consumption of the chief articles of food among different classes of the population,—corn, butchers' meat, and colonial produce. At present, we cannot speak with any approach to accuracy of the extent and cost of the most vital of all requirements, viz., the food of the people. We are perpetually guessing at the probable consumption of wheat and other grains per head—the same of potatoes and butchers' meat, and colonial produce; and until, by a series of extensive and well-devised observations of rigid statistical facts we arrive at results entitled to credence, we shall continue to speculate and reason in the dark. Sir George Lewis did make an effort while he was Chancellor of the Exchequer to ascertain the average consumption of Tea and Sugar; but the effect was partial

only, and can only be referred to as indicating the wishes of a statesman eminent for his sagacity and love of truth.

The collection each year of the statistics of the Acreage under the different kinds of crops, and of the number of Horses, Cattle, and Sheep, has removed one of the most serious defects in our public records. Mr. Hunt, of the Geological Survey, has brought to great perfection his means of ascertaining annually the produce of minerals and metals. The Factory Inspectors furnish in their half-yearly reports much valuable evidence on the condition of the Cotton, Woollen, Worsted, and Hosiery Trades; and the extension of the Workshops' Act to branches of manufacture not hitherto included, *e.g.*, Hardware, Earthenware, Engine works, and some others, may be expected to produce similar periodical reports. It is impossible, in speaking on this topic, to omit reference to the admirable series of works by M. de Lavergne, on the comparative productiveness of French and English arable and pasture farming.

Under the third, fourth, and fifth divisions, embracing the subjects of Wages, Cost of Living, Income, Savings and Taxation of this and other countries, very solid progress has been made during the last ten or twelve years. The extensive and most laborious collections of M. Le Play, who, as Commissaire-General for France, at the Exhibitions of 1855, 1862, and 1867, had the best means of procuring information,\* are, probably, the most important. But our own fellow-members, Professor Leoni Levi and Mr. Dudley Baxter,† have published three works which will form epochs in the history of all investigations relative to Wages, Income, and Taxation in this country. Mr. David Wells, the Special Commissioner of Revenue in the United States, in Reports to which I shall have again to refer, has treated of the same subjects as regards North America, with a freedom, impartiality, and precision, far in advance of any previous example among his countrymen. But all these investigations have only shown more clearly than before that while on one hand, in order to arrive at absolutely positive results, fuller and more accurate details are required, so on the other, a more thorough discussion of the general principles of the investigation is quite as necessary.‡

\* M. Le Play: "*Les Ouvriers Européens*;" and a second work "*Les Ouvriers des Deux Mondes*" (Paris). See also M. Le Play's "*La Réforme Sociale en France déduite de l'Observation comparée des Peuples Européens*." Paris. 2 vols.

† Leoni Levi: "Wages and Earnings of the Working Classes." London. 1867. Dudley Baxter: "Taxation of the United Kingdom," 1869; and "National Income of the United Kingdom," 1868.

‡ The following extract from the "Pall Mall Gazette," of 27th July, 1869, very properly draws attention to sources of error and confusion found in official papers, ignorantly and imperfectly prepared:—

"The Commissioners of Inland Revenue, in referring to a 'Return printed by the House of Commons in June, 1869,' demonstrate how easily the most erroneous

The sixth division suggests the collection of statistical evidence of the cost and burden entailed by large Military Establishments, and I honestly believe that no more important subject can at present attract the attention of statisticians. The real mischief and incubus of military armaments will never be understood by legislatures or subjects until their effects are exhibited in hard facts and in naked detail. M. Legoyt, whose name is among the most eminent of our fellow-labourers on the Continent has just inserted in the "Journal of the Statistical Society of Paris," of which he is Honorary Secretary, a paper on this subject, which I trust will act as a signal in other countries. From this paper I quote the following admirable outline of the whole argument:—

"In 1869, according to estimates which we consider under rather than over the fact, Europe keeps in time of peace an effective army of 3,815,847 men, and inscribes upon its budget a sum of three and a half milliards (140,000,000*l.*), or 32 per cent. of the whole of her expenditure, to meet the cost of this colossal army. Now, let us suppose for a moment that, as the result of an understanding between the Powers concerned, a disarmament to the extent of one-half was carried into effect. Forthwith, 1,907,924 men, of from 20 to 35 years old, the very pick of the population of that age, are restored to peaceful labour, and a saving of

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conclusions may be deduced from it. This return, they observe, purports to show the *proportion of taxation to wealth* in England, and the similar ratio in Ireland; the sum assessed to the *income tax* being taken as the measure of wealth in each kingdom. The result reached on the face of the return is that in England for every 100*l.* of income tax only 17*l.* 14*s.* is raised by taxation, while the proportion in Ireland on the corresponding standard is 29*l.* 10*s.* 7½*d.* Apparently, the latter country surrenders 12 per cent. more of its wealth to the Chancellor of the Exchequer than England. 'A more erroneous conclusion,' the Commissioners assert, 'could scarcely be arrived at.' For these reasons:—1st. The assessment to Schedule A (lands, houses, and real property generally) in England is made upon the full rental, and in Ireland upon the poor-rate assessment—'which we believe is, on the average, at the present time in Ireland at least 20 per cent. below the true value.' 2. The same is true of Schedule B (farmers' profits). 3. On Schedule C (the public funds) a still less valid comparison emerges. The sum assessed in England is 32,500,000*l.*, and in Ireland 1,115,000*l.* These are the dividends payable at the Bank of England and Bank of Ireland respectively. England is debited in addition to the investments of her own holders with those of Scotland, Ireland, and the colonies, and of foreigners in the public funds—to say nothing of the investments of the Irish themselves, among others, in such securities as Indian Stock, Canadian Bonds, French Rentes, Danish, Dutch, Russian, Turkish, and other stock of all foreign Governments. These investments are entirely inscribed on Schedule C of the English returns. 4. Schedule D (profits of trades and professions). The metropolis *de facto* is the great central bank of the banks of the United Kingdom, of many that conduct their business in our colonies and in foreign parts, as well as for numerous public companies scattered over the commercial world. 'The investments of the Irish themselves,' the Commissioners remark, 'in Irish Companies, are assessed to income tax not unfrequently in London, where the head offices of the company are situated.' And 5. Schedule E (salaries of office, &c.), 19,000,000*l.*, salaries and pensions of public servants and of officers of public companies are assessed in England, and but 1,000,000*l.* in Ireland."

1,600,000,000 frs. (64,000,000*l.*) in the budgets of Europe is realised. With this sum Europe might add annually to her present railway system (at the mean cost of 150,000 frs., 6,000*l.* per kilometre) 10,000 kilometres (6,214 miles) of railway; she might complete her system of road communication of every kind in a single year; she might endow in every country and in every parish a primary school. These great improvements once realised, she might, if she determines to maintain the existing amount of taxation, apply the surplus to a progressive reduction of her debt. The annual interest of this debt being now about two and a third milliards (95,000,000*l.*), and being capitalised at an average interest of 4 per cent., representing a capital of 57½ milliards (2,300,000,000*l.*), might (without calculating compound interest) set her free from liabilities in about thirty-six years.

“If, on the other hand, the States in question choose to apply the 1,600,000,000 frs. (64,000,000,000*l.*) thus saved to a reduction of the imposts which now press upon production or consumption, what a relief for the peoples! what a new impulse given to business of all kinds! We have said that 1,907,924 men in the prime of life would be restored to the arts of peace. There would be in this happy fact another efficacious cause of prosperity to Europe. In effect putting the average daily earnings of these 2,000,000 of workmen at no more than 2 frs. each (1*s.* 10*d.*), and on the hypothesis that the wages represent a fifth part of the value produced, this pacific army, then enlisted under the flag of industry, would create a daily value of 20,000,000 frs. (800,000*l.*) and an annual value of 7½ milliards (300,000,000*l.*). This is not all—a considerable amount of capital now employed in the fabrication of articles necessary for the equipment and armament of these 2,000,000 men, would become disposable for, and might be applied to, other branches of national industry incomparably more useful. In a word, the keeping at their firesides of 2,000,000 of young people would have the certain effect of appreciably lowering (for a time at least) the price of manual labour, and so giving a lively impulse to production in all its forms. Setting aside for a moment considerations of economy, we call attention to the advantage which a country gains by cherishing the habit and taste for work in a considerable number of adults whom garrison life now condemns to idleness and to its deadly consequences. We point, moreover, to the love of order, to the public morality, to the maintenance of family ties, which the absence of five and six years from the domestic hearth of these youthful recruits more or less completely violates.”

The seventh and eighth heads suggest that periodical returns should be furnished by Hospitals in the metropolis, and large towns, of such a nature as will admit of a comparison of the efficiency and cost of the relief afforded in each; and also that similar returns should be rendered by Charitable Trusts and Endowments. Upon both these points there can scarcely be room for two opinions. The amount of Income from corporate estates and investments, and from public subscriptions, legacies, and gifts accruing to Hospitals in this country is perfectly enormous; and the only effectual check on the just and skilful expenditure of these funds is to be found in a well-devised scheme of comparative returns appearing at frequent intervals. We should then be able to discover where cost was highest and efficiency least. No undue revelations are needed or desired. But the public have the clearest right to be satisfied that the money they set aside for the relief of sickness and misfortune is put to the best possible uses, and in the most economical manner. Precisely the same observations apply in principle to all Charitable Trusts. These trusts are the creature of the law, and the law in

this regard can only be vindicated so far as it secures the best services.

I pass over the question of religious sects, until I come to speak of the approaching Census.

When any reference (division ten) is made to Sanitary Progress and Statistics, it is impossible not to advert in terms of the highest commendation to the periodical reports of the Sanitary Department of the Privy Council, presided over by Mr. Simon. These reports and the special inquiries placed by Mr. Simon in the hands of distinguished members of the medical and other professions are rapidly accumulating a body of evidence of the highest interest and value. The labours of the royal commission on Sanitary Legislation now sitting, will, it may be hoped, assist still further in extending the powers of State Medicine. Excessive poor rates and criminality are in some large percentage the consequences of the disease, premature deaths, and tainted constitutions entailed by defective sanitary conditions. But the labours of Mr. Simon require to be followed up in every possible form, for the evil is one which can be best defeated in detail.

I invite under the fourteenth head a statistical examination of the effect of Commercial Treaties, and especially of the French Treaty of 1860. I have never disguised my regret at the negotiation of that Treaty. It is said that there were overpowering political reasons at the time why we should conciliate the Emperor's Government; and if the Treaty is to be defended wholly as a political expedient, there may perhaps be some reasons in its favour. But economically there can be none, and I have the firmest persuasion that a careful statistical examination of the whole of our foreign trade since 1860 with countries with which we have, and with those with which we have not, commercial treaties, will show conclusively that experience confirms the soundness of those doctrines which teach that the only means for increasing external trade, is for a country to reduce its import duties as rapidly as possible without the smallest reference to the policy or practice of the foreigner, whether he be found in one hemisphere or another. A country does not live by what it sends out, but what it takes in. The exports are only a means of getting the imports. But unfortunately there seems to be a revival of the old fallacy, that the only use of imports is to take away exports. The State can do nothing to encourage imports, but reduce and simplify the tariff, and when that is done, all is done. Solemn devices and suggestions of treaties are not only idle, but mischievous, because they subject our internal policy to the authorised criticism of foreign countries, and may lead to dangerous disputes and quarrels. If the state of our revenue will permit us to reduce or abolish the duties on French

brandies, wines, and cottons, we ought to do so for our own sakes. The goods will then come;—the French producer will take care that he gets paid for them, and if there were a thousand treaties in force, nothing different could happen or be desired. This is the real Reciprocity, and there is not and cannot be any other. It is a reciprocity of mutual and natural wants founded on cheapness, quality, and convenience, and these are the only conditions on which wholesome and profitable commerce can be carried on. The ordinary idea of reciprocity is, that two nations should maintain an endless diplomatic palaver to settle what articles A shall sell to B, provided B sells certain other articles to A. The history of all commerce is a narrative of the laughable or lamentable failures of all such attempts to teach mankind to make their own bargains and attend to their own business.

The two topics which occur next (divisions fifteen and sixteen) relate to the effects produced in the United States by the Suspension of specie payments, and the high Protective tariff. We have become familiar with the usual newspaper paragraphs, stating that gold in New York stands at 133 or 137, or some other figure, and we hear now and then of different branches of trade—ship-building, for example—having been wholly banished from the territories of the Union by the operation of protective tariffs and other similar legislation. It is said, for example, that so great is the difference in the price and quality of wearing apparel between free trade Montreal and protectionist New York, that as a matter of calculation, it is a saving of money for a person requiring a new suit to travel into Canada and return to New York with the articles upon him. This probably may be a statement not free from the exaggeration of Yankee humour. It is certain, however, that among the most instructive phenomena of the present time are the disturbing influences produced in North America by the depreciated paper money. These influences are mischievous and irritating beyond conception; and they produce their worst consequences among the poorer and working classes. They far exceed in violence any corresponding evils which prevailed in this country during the suspension of cash payments from 1797 to 1819. It is very desirable both in the interests of science and sound policy that they should be studied and exhibited in detail.

And, while mentioning that wish, I may add here, that at such intervals of leisure as a daily business will permit, I have not forgotten those researches on the Circulation of Bills of Exchange, the early result of which appeared in our *Journal* eighteen years ago, and the further results in the “History of Prices,” published in 1857. I am sanguine of being able at no distant date, to lay

before the Society important extensions and additions to the work already done.

The subject next on the list (division seventeen) has reference to an analogous inquiry—the effects produced by the Gold discoveries which began in 1848. It is in the recollection of several of the Fellows, that in the early years of these discoveries I was led to pay much attention to the facts connected with them, and that I arrived at opinions which at that time were highly heretical. I held, for example, that the effect of the discoveries would not be, as was then apprehended, to produce a permanent and serious fall in the rate of Interest, but would, on the contrary, certainly tend to raise it; and I suppose that the course of events has pretty well justified that prediction. I also held that the effect of the new supplies would not be to augment general prices, except in some comparatively partial degree; and this also has become a conclusion at the present time far more orthodox than otherwise. I held also that the commerce of the world, and the progress of invention and discovery, could derive nothing but benefit and stimulus from the enlarged annual supplies of the precious metals—that, in point of fact, the real danger was that these supplies would be too little instead of too much. The following passage from the “History of Prices” (vol. vi, p. 235), published early in 1857, will convey in general terms the groundwork of the reasoning:—

“Set in motion and sustained by the production year by year of large quantities of new gold, there is at work a vast and increasing number of causes, all conducing to augment the real wealth and resources of the world—all conducing to stimulate and foster trade, enterprise, discovery, and production—and therefore all conducing with greater and greater force to neutralise by extension of the surface to be covered, and by multiplying indefinitely the number and magnitude of the dealings to be carried on, the *à priori* tendency of the increase of metallic money to raise prices by mere force of enlarged volume.”

The subject is still among the most important and interesting which can attract statistical inquirers. In Australia, California, and latterly in New Zealand, populous communities are growing up, sustained in the largest degree by the application of rude labour to the business of gold-digging and quartz-crushing; and the exchange and distribution of the gold so produced among the nations of the world, reduces to the test of facts some of the most subtle as well as some of the most common doctrines of political economy.

The literature of the subject has become extensive. M. Chevalier's well-known work “*La Monnaie*,” is still a leading authority,

and among the latest and best is a book by Mr. Blake, the Commissioner for California, at the Paris Exhibition of 1867.\* There is also a very useful and comprehensive pamphlet by Dr. A. Soetbeer, of Hamburg.† A series of articles by M. Bonnet have appeared during the last two years in the "*Revue des deux Mondes*," on the effects of the gold discoveries, urging views very similar to those I have quoted from the "*History of Prices*."

The last subject (division eighteen) in the list, relates to the mathematics and logic of Statistics, and therefore, as many will think, to the most fundamental enquiry with which we can be occupied. Dr. Guy, so long honoured and esteemed as one of our Secretaries, has given much attention to this subject, and papers contributed by him occur in the *Journal*. This abstract portion of the enquiries we cultivate is still, however, in the first stages of growth. It is certain that by means of the averages, and variations of increase and decrease, presented by large masses of figures representing social phenomena which occur within longer or shorter intervals of time and within defined limits, it is possible to arrive at conclusions which so far resemble the law of the several cases that they justify the enunciation of probabilities and predictions. In Vital Statistics we have established a long series of such ultimate conclusions, or Ultimate Statistical Units, as I prefer to call them. What has been done in Vital Statistics, will, in progress of time, be achieved in other branches of inquiry. But there is a preliminary stage to go through, and that is the improvement of methods and notation.

The Registrar-General's office is able to speak with confidence on all the questions which are referred to it, because the record of its observations has been successfully reduced to a rigidly scientific and uniform method and notation. The Tables from the least to the greatest are constructed on the same plan, classified in the same order, and strictly limited to the kind and number of facts which have been ascertained to be sufficient. Superfluous details and superfluous integers are avoided as positive hindrances to the general reasonings alone admissible. We have in this example a lesson of the kind of correction very largely required in every branch of statistics. We waste labour and confuse the subject by running into useless and obstructive fractions. It is, for instance, a very common thing to see statistical tables which exhibit millions of pounds sterling giving not only the last pound, but also the shillings, pence, and

\* "*The Production of the Precious Metals, or Statistical Notice of the principal Gold and Silver producing regions of the World;*" by Wm. R. Blake. New York. 1869. Putnam, sen.

† "*Graphische Darstellungen in bezug auf Werthrelatione der Edelmetalle.*" Dr. A. Soetbeer. Hamburg. 1869.



farthings. If, of course, the object is to arrive at an exact statement of money due from one person to another, this minute accuracy is indispensable, but where the purpose is a general one, and aims at no more than the exhibition of the larger variations, it is obvious that the tables should be limited to the really important amounts. The omission of superfluous figures, also has the great advantage of simplifying all tabular compilations and so economising labour and cost.

We must cultivate an increasing appreciation of this powerful instrument of systematic and continuous tabular record, and we must be constantly loyal to the principle which lays at the foundation of all our labours, viz., to seek opinions in the facts, and not seek facts to suit opinions:—or, what is the same thing, and the better mode of stating it, we must observe and reason on social phenomena precisely as we observe and reason on physical phenomena. The human mind is only susceptible of one method of accurate investigation, and the world is full of fallacies and confusions because blind traditions and imperfect education have taught that there are almost as many processes of reasoning and evidence as there are subjects to be understood.

While speaking on this subject, I may illustrate the force and value of this method of variations and averages as applied to continuous statistical records, by referring to a statement made to me by Dr. Berg, the Chief of the Statistical Bureau at Stockholm, when I met him lately at the Hague. In Sweden, as is well known, there exists a singularly complete series of parish registers, commencing in the sixteenth century, or earlier. It is known also that the Swedish population has been but little modified or disturbed by emigration or immigration. Dr. Berg has been led of late years to examine and tabulate abstracts of these registers, and he has observed the following remarkable result:—Taking periods or years of national privation, such as famine, war, or pestilence, imposing severe suffering on the people, and consequent excessive mortality, he finds that after the lapse of about two generations, say seventy years or more, there is, for a period of some length, a positive falling off in the increase of population, as determined by births and deaths, which had prevailed before the arrival of this (say) seventieth year. In other words, supposing Dr. Berg's present views to be confirmed by further investigation, it will appear that seasons of exceptional calamity and privation reassert their repressive influence on population at the commencement of the third succeeding generation.

It is just possible, and I will make the suggestion for the consideration of those better able than myself to verify it, that this hypothesis of Dr. Berg may, if verified, assist us in explaining the undoubted rapid increase of the English population between 1790

and 1811, an increase far exceeding that of the early part of the eighteenth century, for as we know it was contended by many acute observers living at that time, that the population of England under Anne and George I did not increase at all, but the contrary. It is undoubtedly true that as a consequence of the unusual and great plenty of the wheat harvests during the fifty years after the Peace of Utrecht (1711), a marked improvement took place in the food of the poorer classes; and it may, perhaps, be found that the full force of that better condition began to assert itself at the end of the seventy years' term which Dr. Berg thinks he has discovered in the Swedish tables.

I said just now that I reserved the subject of the ascertainment statistically of the numerical strength in the United Kingdom of the different Religious Sects till I came to speak of the approaching Census to be taken in March, 1871.

As on former occasions the Council have appointed a Census Committee to whom may be referred questions and suggestions relating to the national enumeration now so near at hand. It is not possible, I imagine, that any material departures will appear to be advisable from the very complete and successful achievements of 1851 and 1861. Two things indeed are manifestly plain, viz., 1st, that with a view to a continuous record on the same bases, novelties of procedure are positively pernicious; and 2nd, having regard to cost, expedition, and accuracy, there cannot be any important addition to the number of questions to be asked and particulars to be collected.

But upon one point there will, I trust, be an unanimity and a force of public opinion which will be decisive. I mean, the introduction of such inquiries into the Census paper as will ascertain the numerical force of the various churches and sects in this country. In 1851 some approach was made to such a result by attempts to estimate or enumerate the attendance at places of worship on a particular Sunday; and in spite of the luminous and impartial discussion of the figures so obtained by our fellow-member, Mr. Horace Mann, we all recollect the outburst of temper and recrimination which burst in more or less violence from almost every one of the religious bodies in the country. There was in each case a stout repudiation of the figures, as being far below what they ought to be, and the authorities of the religious world agreed only in one point, viz.: that every particular sect had been under-represented to the advantage more or less unfair of every other. I pass over the amusing stories which were current of adroit contrivances in certain cases for increasing the attendance on the Census Sunday by services of special interest including, it was alleged, and instances were named, the distribution of tea and cake.

In 1861, Sir George Lewis, who had charge of the Census Bill, endeavoured to maintain a clause which directed the insertion of questions in the Schedule to be left at each house asking for a statement of the religious sect, if any, to which the occupiers belonged. But he was compelled, after much resistance on his part, to abandon it. The non-conformists alleged that many persons would not answer the question at all, and that all such neutral cases would be claimed as belonging to the Established Church, to the manifest injury of parties who dissented from it. The Established Church on the other hand, were afraid that the number of these neutral cases would be so great in the poorer quarters of the larger towns and manufacturing districts as to show very forcibly that the Church of England was only in a very partial degree the poor man's Church. The end has been that the United Kingdom is almost alone among civilised States in being wholly unable to give any accurate statement of the numerical force of the religious confessions prevailing among its population. The result is lamentable and disgraceful in many ways. In the first place, the omitted facts are most material for many purposes of legislation especially as regards education. In the second place, it is humiliating that the religious parties should be unwilling to have the whole truth ascertained whatever it may be. Suppose it to be true, for example that a very large percentage of the poorer population in towns should return themselves as belonging to no sect whatever, or as being secularists or Mormons; surely it is better for the religious authorities to know precisely in what force and in what places these views prevail, than to be left to vague speculations and guesses.

We have therefore, by the aid of public opinion, again to urge Parliament to authorise the Census Commissioners for 1871, to insert such questions in the Householders' Schedule as will accomplish a Census of religious Sects.

The Seventh Session of the International Statistical Congress was held at the Hague, on the invitation of the Dutch Government, in September last; and of this meeting, Mr. Samuel Brown, who was one of my colleagues in the representation of the Society, will give a more particular account. It is due, however, to M. Baumhauer and the organising Committee that I should express the acknowledgements of the Society for the cordiality and judgment displayed in all the arrangements for the reception of its Congress; and it is a matter of duty to add, that every member of the Congress carried away from the Hague a vivid impression of the intelligent and dignified courtesy extended to them by the Queen of Holland. The Congress has now held its meetings in all the

more important European capitals—Brussels, Paris, Vienna, London, Berlin, Florence, the Hague—and in 1871 most probably at Petersburg, the choice lying apparently between that capital, Madrid, and Pesth. In many respects it is impossible to overstate the beneficial results which have flowed from the discussions and labours of the Congress. In this country, in consequence of an earlier attention to statistical inquiries, to the purely parliamentary nature of our administration, and more than all, to the important influence of independent research as represented by this Society, the direct effect of the recommendations of the Congress has been far less than in the continental States, where the entire subject is in the hands of Government Departments. But the growing attendance at each meeting of the Congress, both of official and non-official persons, the more systematic and practical nature of the business brought before the Sections, and the great desire manifested by different countries to be selected as the place of meeting, are all undeniable evidence that advantages solid and practical have flowed from the proceedings.

To the younger countries in which parliamentary government is becoming developed, the value of the Congress is very great. It furnishes them in the best form with the results of statistical organisation in the more advanced States, and hence it has happened that Italy, Hungary, Roumania, Spain, Austria, Greece, Russia, Finland, and even Turkey and Egypt—countries young comparatively in the modern modes of administration, have made extraordinary progress in the organisation of Statistical systems, which have already enabled them to deal in the most confident manner with questions relating to their material resources.

Among the best reports presented at the Hague were those from the younger countries, especially Hungary, Roumania, and Finland. The report from Hungary, by Mr. Charles Keleti,\* is a document of considerable merit, and indicates the very rapid progress already made in collecting accurate data from a country till quite recently unsettled. The report from Roumania was of the same character, and the Memoir by M. Ignatius,† on the population of Finland, is a model of scientific arrangement and precision.

Hitherto the official language of the Congress has been French, and German has been also allowed. But the time has surely come for admitting English as one of the languages on the occasion of these meetings, and for the following reasons. English is the language of the United Kingdom, of Australia, India, the Cape,

\* "Statistique Officielle de la Hongrie: rapport présenté au VII Congrès International de Statistique, à La Haye en 1869." Par Charles Keleti, Chef de la Section de Statistique à Pesth.

† "Renseignements sur la Population de Finlande," par E. C. F. Ignatius, Chef de Bureau, Helsingfors, 1869.

and North America—all regions contributing year by year more largely to statistical research and experience. English is very generally understood in Germany, Russia, Holland, Hamburg, Denmark, and Sweden. These considerations are so powerful that I trust, whoever may be the occupant of this Chair on the occasion of the next Congress, he will be instructed by the Society to apply officially for the just recognition of the English tongue in the proceedings.

I would also suggest here, as one of the subjects to be investigated at the next Congress, the settlement in each country of the best Statistical Tests for ascertaining at short intervals its prosperous or adverse condition. A chief object of all statistical evidence is to enable us to form a judgment, whether at any given time the condition of the inhabitants of a country as indicated by mortality, sickness, food, clothing, wages, pauperism, agriculture, commerce, revenue, savings, and domestic and foreign enterprise, is favourable or the reverse. In every country the predominant tests will vary. In England we depend largely on manufactures and foreign trade; in France, the greater dependence is on agriculture and the vintage; in Russia in still ruder kinds of cultivation. Still in every country, and especially in this country, we ought to be agreed upon some system of statistical tests, available at short intervals, for indicating beyond cavil whether our population, or at least a large portion of them, are in prosperous or adverse circumstances. The quarterly reports of the Registrar-General do accomplish this purpose, so far as Births, Deaths, and Marriages are concerned, and accomplish it in a manner which leaves nothing to be desired. We have then to ascertain into how many other departments we can carry the exhaustive method we have already applied to vital statistics. I have a strong opinion that it will be found possible, even with our existing materials and machinery, to accomplish a great deal more in this direction than most of us would, in the first instance, suppose to be possible.

The most notable and important work connected with statistical research which has appeared for a long period is the Rev. Professor Rogers's\* two volumes, published by the University of Oxford in 1866, under the title of "*A History of Agriculture and Prices in England, 1259—1400.*" The materials of the work were collected,

\* "*A History of Agriculture and Prices in England from the year after the Oxford Parliament (1259) to the commencement of the Continental War (1793).* Compiled entirely from Original and Contemporaneous Records." By James E. Thorold Rogers, M.A., Professor of Political Economy in the University of Oxford, and Tooke Professor of Economic Science and Statistics in King's College, London. London: vols. i and ii, 1259—1400 (pp. 1456). Oxford: Clarendon Press, 1866.

arranged, translated, and tabulated by Mr. Rogers, from original parchment records, which by great industry he discovered in the muniment rooms of New College, and some other similar foundations at Oxford. The facts, therefore, included in the volumes have an authenticity beyond dispute, and they moreover represent actual transactions carried on for long periods of time by persons of the same class and pursuing the same objects. The range of the facts themselves is extensive. They include all kinds of agricultural and grazing produce, building materials, articles of clothing, implements of trade and husbandry, expense of conveyance and travelling, and so forth.

Mr. Rogers says in his preface:—"There is no need of any apology in offering the facts contained in these volumes to such persons as are interested in the social history of the southern part of our island. They are an attempt to satisfy a total void, namely, the complete absence of all satisfactory information on Prices in mediæval England. As no treatment of the subject has been in any sense heretofore attempted, it was necessary to publish the great mass of facts which have been gathered, as well as to offer comments on their significance.

"There is no European country, I believe, except England, the archives of which could supply satisfactory evidence of prices. Up to the time of Henry VIII, the changes in the English currency, even if they were really operative in prices, were effected at well-known dates. \* \* \*

"Such labours as those which I have undertaken are essential to that economical interpretation of history which I venture in asserting is as important an aid towards the comprehension of the past, as the study of legal antiquities, of diplomatic intrigues, or of military campaigns. There are very few important events on which an estimate of those facts which form the special study of the economist would not throw great light. \* \* \* Nor is the bearing of such facts as will be found recorded in these volumes without its meaning on those maxims of Political Economy, the adoption of which is already general, and the practice of which is destined at no remote period to become the chief function of wise government. All Economists profess that the illustration of facts is quite as important in the method of their science as the discussion or elucidation of principles. In my opinion, it is even more important, because these facts form the basis for economical deductions. Very few authors, however, have combined exact reasoning with plentiful illustration; very few, however much they have professed to defer to experience, have undergone the drudgery of patient observation. Adam Smith and Tooke are eminent exceptions."

These passages convey an outline of the *principle* of Mr. Rogers's Inquiry, but they most inadequately indicate the thoroughness, patience, honesty, and scientific precision with which he has worked out his truly comprehensive design. Mr. Rogers has not only collected and arranged the facts in logical and natural order, but he has fortunately employed the larger part of his first volume in a careful discussion of the results which the evidence presents and suggests; and in that volume, I do not hesitate to say, may be read for the first time a true history of the English producing and working classes during the thirteenth and fourteenth centuries.

The University of Oxford has done wisely in taking charge of the printing and publication of a work which adds so largely to the solid fabric of exact knowledge, and does so much honour to a man who has won an enviable place in those intellectual competitions which during the last fifty years have regained for Oxford its early usefulness and fame.

Next in order of merit and value to the work of Professor Rogers, I must place the series of reports presented to the Congress of the United States by Mr. David Wells, the Special Commissioner of Revenue to the Executive at Washington.

Mr. Wells commences his Third Annual Report,\* dated Washington, January, 1869, by saying :—"I propose in this, my Third Annual Report, to ask the attention of Congress to the results of a somewhat extended investigation instituted with a view, not of establishing or confirming any particular theory, but rather of determining through the collection of positive data what policy in legislation is likely to prove hereafter most advantageous to the Revenue, and most certain to establish the credit and industry of the whole country upon a sound and substantial basis."

Mr. Wells then proceeds in the Third, as in the two previous reports, to a systematic and minute examination of an immense body of facts collected from all quarters, and with exceeding diligence and care, calculated to show the real condition of the several regions of the Union, and to indicate the financial and fiscal policy best suited to their requirements. The object, therefore, of the reports is eminently scientific, and they furnish one of the most remarkable instances hitherto on record of a high executive officer, publicly addressing a Legislature in such language and seeking to convince them by such a method.

Nor is the entire tone and character of the Reports themselves less commendable than the principle on which they are constructed. The language and arguments are those of a patient and candid observer and reasoner. In no sense that of a man who had formed

\* "Report of the Special Commissioner of the Revenue for the year 1868," Washington. January, 1869.

certain opinions *à priori*, and was determined therefore to employ all the arts of ingenuity and persuasion to enforce them. We may, therefore, refer with satisfaction to these official memoirs by Mr. David Wells as successful examples of the application to purposes of practical government of those exact methods of observation and record which it is the chief purpose of this Society to enforce and render perfect.

A third recent publication to which I am bound to refer is the volume which has appeared in Paris this year (1869) by M. Maurice Block,\* and entitled "*L'Europe Politique et Sociale.*" The author describes his object as follows:—

"Le but du présent ouvrage est d'exposer, de la manière la plus claire et la moins aride, les faits politiques et les faits sociaux les plus importants et d'en extraire les enseignements qu'ils renferment. Nous nous sommes mis à l'œuvre sans autre parti pris que celui de rechercher la vérité et de la dire sans crainte: c'est qu'il faut du courage pour dire la vérité. A de rares exceptions près tous les chiffres présentés dans ce livre ont été extraits des documents originaux.

"Le plan de l'ouvrage ressort suffisamment de la table systématique des matières ci-après. Nous avons divisé notre livre en trois parties: les deux premières étudiant *comparativement* les Etats de l'Europe tant au point de vue politique qu'au point de vue social: la troisième présentant dans une série de tableaux sommaires la situation de chaque Etat. Chacun de ces tableaux constitue la monographie d'un Etat Européen. Nous croyons que ce plan facilitera à la fois la lecture et les recherches."

The previous reputation of M. Block justifies us in expecting that a scheme of this nature deliberately adopted by him would be carried into execution not only with fulness and accuracy, but also with a degree of originality and freedom not often found in combination with qualities of the patient and exact order; and the result entirely justifies these expectations. The work is in all respects one of authority. It is full of original reflexions and suggestions, and in the hands of M. Block the application of the statistical method is marked by a comprehensiveness and precision which raises it, in many respects, to the level of the exact sciences.

I may again refer to the volumes by Professor Rogers, and the mediæval economical history of this country, for the purpose of suggesting, that among the future labours of the Society, I trust that a place will be found for one of the objects always contemplated by

\* "*L'Europe Politique et Sociale.*" Par Maurice Block. Paris: 1869. 1 vol. 8vo, p. 630.



our founders. I mean the republication, with needful and illustrative facts and commentaries of well-known important statistical writings of former periods. For example, there is no complete or properly edited edition of the writings of Gregory King, and the same may be said of the writings of Sir William Petty and Sir Josiah Child. There are also several valuable tracts by Dr. Price, and around Chalmers' Estimate of the resources of Great Britain, in the middle of last century, much instructive evidence might be collected, and much profitable discussion might arise. Mr. Rogers has shown us how much may be learnt by an intelligent investigation of the facts of an early period of our history, and as we come nearer to our own time, it is certain that the interest and instruction will increase and not diminish.

It would be very gratifying to me if I could announce in this address any real progress towards the provision of a suitable building, on a suitable site, in which might be accommodated the twelve or more societies \* pursuing objects more or less analogous to our own. Burlington House, and the Jermyn Street Museum are the homes of the Physical Sciences; South Kensington is the central authority in Art and Design; the British Museum represents Literature; and the Record Office and its adjuncts Antiquarian research. There is still wanted, and as it seems to me urgently wanted on grounds of public convenience and utility, a central home of the Social and Mixed Mathematical Sciences—sciences which have risen rapidly into power, and are yet only in their youth. Now, as always, I strongly deprecate any State patronage or subsidy, but it would be quite possible to frame a scheme under which a combination of independent societies, such as are mentioned at the foot of the page, could raise an aggregate annual rent, offering a reasonable return on the capital invested in a building. Discussions are already started regarding public edifices at the western end of the Thames Embankment; and I venture thus early to put forward a claim for consideration, on the independent grounds I have stated, on behalf of the active and progressive cultivation of the different branches and aspects of the new but already established Social Sciences.

To return, however, to the more general topics of this address :—The one overpowering result which ever arises as the result of our most complete and successful studies in these Social Sciences,

\* The following fifteen societies naturally group themselves in the same category :—Statistical, Actuaries, Surveyors, Juridical, Medical Officers, Epidemiological, Mathematical, Meteorological, Social Science Association, Chambers of Commerce, Philological, Schoolmasters, Colonial, Emigration, Reformatory and Refuge Union.

whether relating to the Past or the Present—but especially as they relate to the Present—is the conviction that until the popular Education given in our schools to the boys and girls of the working classes is made to convey more industrial and economical knowledge we shall encounter all the complexities of an increasing population and a limited territory with greater and greater difficulty. With eight-tenths of our people living on wages of one sort or another—that is, depending for life and comfort on the effective demand for skill and labour—it is so manifestly our first duty to teach to every child the rudiments at least of those branches of knowledge which concern wages, and the prosperity of labourers and employers, that at no distant period the wonder will be indeed great that we persisted so long in teaching almost all subjects but these. The standard of living, comfort, and education among the body of the people can only be advanced as a consequence of previous accumulations of capital; accumulations of capital can only arise from a steady increase of gross produce as the result of more perfect skill and more perfect command over the domain of nature, and the superiority of one country over another can only arise from greater force of mind and greater resources of knowledge and invention. But the first and fundamental condition is to include in our popular education so much industrial and economical teaching as will enable every child in the country to apply its strength and intelligence to the best advantage; and so long as this end is attained, a wide latitude may safely be left to the rest of the curriculum. But besides this neglect, hitherto, of the economical element in education, there are at work in Europe three other great evils, the removal or abatement of which would go far to renovate the aspect of modern social life,—namely, the neglect of fresh air and pure water; the abuse of strong drinks; and the excessive expenditure on armed forces. If to the waste of power and waste of capital occasioned by defective education, we add the destruction of energy, intelligence, and life arising from the three causes just named, we may safely affirm as a statistical fact not to be impugned, that until these evils are removed every ameliorative device of modern civilisation is deprived of its most vital force and virtue.

The audience whom I address have at least the satisfaction of reflecting that the enterprise they foster—an enterprise I have shown to be already crowned with large and solid success—derives its claims and dignity from the very circumstance that it seeks to advance the condition of Men in Societies by ascertaining, with scientific impartiality and preciseness, the origin, nature, and effect of those influences which both deteriorate and improve modern communities. We disclaim sentiment and declamation, but without denying the proper functions of either under suitable circumstances.

We equally disclaim pre-arranged systems of opinion or doctrine. We believe in no system except that of Truth, followed with a single purpose, in a patient spirit, and with honest zeal. We owe allegiance to no party or sect—to no State authority—and to no traditions, whether of earlier or later times. We are not impatient to discover the whole truth even as it applies to our own limited field at once; for we know full well that the growth of Scientific Certainty has been, and must be always, slow and fluctuating; but we also know that to the thoughtful and honest inquirer the difficulties of the path are not discouragements, nor its devious windings more than incentives to fresh efforts; persuaded as he is that where passion, interest, and prejudice do not interfere, the ultimate end must be some near obtainment of the noblest of all conceivable visions—a vision, namely, of Truth, pure, cloudless, and supreme.

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# APPENDIX A.

*The following is the ROLL of PRESIDENTS of the STATISTICAL SOCIETY  
since its FOUNDATION in 1834.*

1834-36. MARQUIS OF LANSDOWNE.	1853-55. EARL FITZWILLIAM, K.G., F.R.S.
'36-38. SIR CHARLES LEMON, BART., M.P.	'55-57. EARL OF HARROWBY, F.R.S.
'38-40. EARL FITZWILLIAM, F.R.S.	'57-59. LORD STANLEY, M.P.
'40-42. LORD VISCOUNT SANDON, M.P.	'59-61. LORD JOHN RUSSELL.
'42-43. MARQUIS OF LANSDOWNE.	'61-63. RIGHT HON. SIR JOHN PAKINGTON, BART., M.P.
'43-45. LORD ASHLEY, M.P.	'63-65. COLONEL W. H. SYKES, M.P., F.R.S.
'45-47. LORD MONTEAGLE.	'65-67. LORD HOUGHTON.
'47-49. EARL FITZWILLIAM, F.R.S.	'67-69. RIGHT HON. W. E. GLAD- STONE, M.P.
'49-51. EARL OF HARROWBY.	'69. WILLIAM NEWMARCH, F.R.S.
'51-53. LORD OVERSTONE.	

# APPENDIX B.

As the Prospectus of the Society and the First Report are now out of print, it is considered desirable to insert them as an Appendix to the foregoing address.

## PROSPECTUS

OF THE

## OBJECTS AND PLAN OF OPERATION

OF

## THE STATISTICAL SOCIETY OF LONDON,

Founded on the 15th March, 1834,

*In pursuance of a Recommendation of the*

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE Statistical Society of London has been established for the purposes of procuring, arranging, and publishing "Facts calculated to illustrate the condition and prospects of Society."

The Statistical Society will consider it to be the first and most essential rule of its conduct to exclude carefully all opinions from its transactions and publica-

tions—to confine its attention rigorously to facts—and, as far as may be found possible, to facts which can be stated numerically and arranged in tables.

The first operation of the Society will probably be to subdivide and organise its General Council in such a manner as may enable that Council to deal conveniently with all the subdivisions of the subject-matter before it. Those subdivisions will necessarily be numerous.

The whole subject was considered by the statistical section of the British Association at Cambridge, as admitting a division into four great classes.—

1. Economical Statistics.
2. Political Statistics.
3. Medical Statistics.
4. Moral and Intellectual Statistics.

If these four classes are taken as the basis of a farther analysis, it will be found that the class of

*Economical Statistics* comprehends, 1st, the statistics of the natural productions and the agriculture of nations; 2ndly, of manufactures; 3rdly, of commerce and currency; 4thly, of the distribution of wealth, or all facts relating to rent, wages, profits, &c.

*Political Statistics* furnish three subdivisions, 1st, the facts relating to the elements of political institutions, the number of electors, jurors, &c.; 2ndly, legal statistics; 3rdly, the statistics of finance and of national expenditure, and of civil and military establishments.

*Medical Statistics*, strictly so called, will require at least two subdivisions, and the great subject of population, although it might be classed elsewhere, yet touches medical statistics on so many points, that it would be placed most conveniently, perhaps, in this division, and would constitute a third subdivision.

*Moral and Intellectual Statistics* comprehend, 1st, the statistics of literature; 2ndly, of education; 3rdly, of religious instruction and ecclesiastical institutions; 4thly, of crime. Although fourteen subdivisions have now been enumerated, it is probable that more will be required.

It will not of course be necessary to have a distinct subcommittee of the Council for each of these subdivisions; but a convenient division of the Council, and an arrangement of the individuals composing it, so as best to deal with all the different portions of the common subject, will be a necessary preliminary to any systematic course of inquiry.

When these subdivisions are established, it will be for them, subject to the approbation of the Council, to sketch the outline of their own operations. A few observations on the more general efforts and objects of the Society are all that need be presented here.

It will be desirable that the Society should, as soon as possible, endeavour to open a communication with the statistical department established by Government at the Board of Trade. Without such a communication constantly kept up, the Society can never be assured that it is not doing unnecessarily what the Government is doing at the same time and better. The result of such a communication would probably be that the Society would abandon to the care of the Government some part of this very extensive field of inquiry altogether, and more of it partially, which would still leave a very sufficient, though a less overwhelming task to the Society.

The Society having its own work thus somewhat limited and defined, may next proceed to consider the best means, 1st, of collecting fresh statistical information; and, 2ndly, of arranging, condensing, and publishing much that already exists. Towards collecting fresh statistical information, the first step, in order both of time and importance, would be the arrangement of a good set of interrogatories, to be drawn up under the superintendence of the subcommittees, and afterwards examined, sanctioned, and circulated by the Council. The careful execution of this task is

essential, both to afford guidance and aid to individual inquirers, and to protect the Society against the influx of imperfect or irrelevant statements. Willing agents of inquiry exist in abundance, quite ready to aid in collecting materials; but few of these agents take a very wide view of all the objects of statistical inquiry, and indeed, few have very distinct notions about the precise information the Society may wish to collect, even as to any one object. To sketch, therefore, distinctly, by means of interrogatories carefully and succinctly drawn, the whole outline which it is wished to fill up, is the only way to secure to the Society the full benefits to be expected from their zeal. It is difficult to overrate the importance of the step which will be made towards the accumulation of statistical knowledge from all quarters of the globe, by the publication of such a set of questions; but the operation will be as laborious as it is important. It properly may, and probably will, form the chief object of the exertions of the Council during the first year of the Society's existence.

Obvious advantages may be drawn from communication with intelligent Englishmen about to travel abroad, with residents in the colonies, and with colonial gentlemen resident in England. The Society has already the satisfaction of knowing, that it will have friends and assistants equally zealous and able in our western colonial possessions. Various societies, foreign and domestic, abound both in our own country and on the continent, some of them already devoted to this subject, and others very willing to take it up. In addition to those already in existence, the Society may hope to see other local societies springing up in every part of the British dominions, in direct and constant connection with the London Society; circulating its queries in their immediate neighbourhood, and collecting and authenticating the answers. A body of facts can be thus most conveniently collected, which may properly enter into a common publication, and will afford safe grounds for comparing the present condition and future progress of different parts of the empire. The London Society, therefore, will carefully cultivate a connection with, and attend to the wishes and suggestions of, such local societies, and will look forward to their multiplication and correspondence as among the best supports of its own continued efficiency.

The collection, by such means and agents, of new statistical materials, will form, it will be remembered, only one part of the Society's work. To condense, arrange, and publish those already existing, but either unpublished, or published only in an expensive or diffused form, or in foreign languages, would be a task of equal usefulness. Authentic statistical accounts, even of an old date, may perhaps advantageously receive some attention. Our Oriental dominions alone present a field of statistical research as interesting as it is immense. Many materials, collected from that field by the meritorious exertions of the East India Company, are known to be in existence, and it is to be hoped that, sooner or later, they will be brought through some channel before the public.

To point out such existing collections, old and new, their character, value, and the degree of interest attached to them, will form an appropriate part of the duties of the subcommittees of the Council, and will itself be a considerable step in statistical knowledge. The extent to which the Society shall deal with the existing materials so pointed out to it, can only be considered when the means and resources it is to possess are better ascertained.

It will of course be one prominent object of the Society to form a complete statistical library as rapidly as its funds may admit.

HENRY HALLAM, CHARLES BABAGE, RICHARD JONES, JOHN ELLIOTT DRINKWATER,	}	<i>A Provisional Com-          mittee authorised          to issue this Pro-          spectus.</i>
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LONDON, 4, ST. MARTIN'S PLACE,  
*April 23, 1834.*

REPORT of the COUNCIL to the ANNIVERSARY MEETING,  
16th March, 1835.

THE Council of the Statistical Society of London, in making their first Annual Report, feel that they have much reason to congratulate the Society on its present state and prospects, the number of Fellows up to the present time belonging to the Society, is 398. The Council believe that no Society established for similar purposes could show such a list in the first year of its existence.

A special general meeting, summoned on the 30th May last, entrusted to the Council the power of admitting Fellows without ballot until the commencement of the present session. The Council then stated their opinion that the continuance of this power would be beneficial to the Society, and have much satisfaction in reporting that this anticipation has been realised—ninety-nine Fellows having been admitted by the Council under this power.

Although the Council do not propose to establish the practice observed by some societies, of noticing the loss of distinguished Fellows, they feel themselves compelled to make one exception to the rule which they recommend for future observance. The name of Mr. Malthus is so celebrated in every part of the world where the science of statistics is cultivated, and the impulse given by him to the study of this science (especially in that important branch of it with which his reputation is peculiarly connected), that the Council cannot refrain from expressing their sense of the great loss which the Society has experienced by his lamented death. The constitution of this Society precludes the Council from passing judgment upon the opinions which have made his name so distinguished: it is on different grounds, it is in the character of an ardent lover of truth, of a sedulous investigator of facts, and a generous encourager of all who have been stimulated to follow in the same laborious path, that the Council deplore the loss of one of the principal founders of this Society.

The Council have not thought fit to exercise their power of recommending any foreign members for election by the Society in addition to Mr. A. Quetelet, whose name is already enrolled among its founders. There are many distinguished foreigners whom the Council would gladly see associated with the Society, and of whom it is known, not merely by the general interest which they take in the progress of statistical knowledge, but also from personal assurances that they feel anxious to promote its objects. But it has been considered advisable by the Council that the selection of such foreign members by this Society should be postponed until its proceedings have been farther matured, so that those who may be selected for this distinction may feel that while they confer, they also receive, honour in becoming associated with its inquiries.

One object which the Council have had constantly in view is the encouragement of corresponding provincial societies; and it is gratifying to the Council to be able to announce that a very lively interest on this subject is evinced in various parts of the country. Statistical societies are either formed, or on the point of being formed, in Birmingham, Edinburgh, Glasgow, Hull, Liverpool, Manchester, Worcester, and other places, and the correspondence of the members of the Council entitles them to expect that the example set by these great towns will soon be very generally imitated.

The financial affairs of the Society are in a very flourishing condition: of the 398 members, 28 have compounded, leaving 370 annual subscribers. The sum of 567*l.* being the amount of the compositions before the commencement of the present year, has been invested in the 3½ per cent. Reduced Annuities, in the names of the trustees of the Society, and, after the payment of every expense incurred to the end of last year, there remained in the hands of the treasurer and secretaries the further sum of 1487*l.* 19*s.* 2*d.* The amount of subscriptions owing for the past

year, on the 1st of January, 1835, was 151*l.* 4*s.* Of this amount the sum of 27*l.* 6*s.* has been since received, thus leaving the sum of 123*l.* 18*s.* still due on account of the subscriptions for 1834.

The treasurer's accounts have been examined by the auditors; their report was presented and read at the last ordinary meeting of the Society, and will be again read to the present meeting. The auditors have suggested some alterations in the manner of passing the accounts, which the Council have had under consideration, and have adopted.

A few changes in the regulations of the Society have been proposed, and resolutions embodying them will be submitted at the conclusion of the reading of this report, to the determination of the Society. The only points of importance relate to the manner of admitting Fellows, and of choosing the Council and officers of the Society.

The existing regulations require that the certificate of every candidate should be suspended in the meeting room of the Society during two ordinary meetings before that at which the vote shall be taken on the question of his admission. When this regulation was framed, more frequent meetings of the Society were contemplated than have been since thought advisable. It appears that the time of three months, during which the regulations now require the suspension of these certificates, is unnecessarily long: one resolution is intended to abridge this period.

The appointment of a Council of thirty-one members was only for the year which is on the point of expiring, and no provision has been yet made for regulating the manner of its continuance. The number has been found suitable, and it is proposed that it should be continued, and that six Fellows at least who were not of the Council of the previous year, shall be annually elected.

Some provision, also, is necessary to meet the contingency of extraordinary vacancies in the Council, or among the officers of the Society: a resolution has been prepared which provides for filling all such vacancies in the same manner as, by the existing regulations, an extraordinary vacancy of the president's chair can be supplied.

It is also proposed, in order to avoid postponing the confirmation of the minutes of the general meeting until the next anniversary, that they shall be read and confirmed at the next following ordinary meeting after the day of such anniversary meeting.

The regulations provide that the Council shall declare, at the anniversary meeting, the time for holding the ordinary meetings in the ensuing year. As the day and hour already fixed upon have been found convenient, the Council hereby declare that these meetings will continue to be held at 8 o'clock of the evening of the third Monday in each month during the Session of 1835-36.

The Council have concluded an agreement with the Royal Society of Literature, for the use of the rooms in which the ordinary meetings are held, at the annual rent of 100 guineas. A condition is inserted in the agreement, for permission to hold the anniversary meeting in the rooms in which the Society is now assembled. A desire has been expressed by some Fellows of the Society that the attention of the Council should be directed towards procuring more capacious apartments, but, although the Council are aware that additional accommodation may be required at no very distant period, they cannot recommend that the Society should involve itself in any additional expense on this account, until some inconvenience shall have made itself practically felt in their present situation.

The Council at first attempted to transact their business with scarcely any assistance but that of the honorary secretaries, and the best thanks of the Society are due to those gentlemen for their unremitting exertions. It was soon evident, however, that the demands upon the time of the secretaries were greater than the Council considered themselves justified in making, or the secretaries were able to afford. The Council, therefore, decided on appointing a salaried assistant-secretary,



and have much reason to congratulate the Society on the intelligence and activity already displayed by the gentleman on whom their choice has fallen.

The attention of the Council has been directed to the formation of a statistical library. Numerous valuable donations have been received from various Fellows of the Society, partly by unsolicited donations, and partly in consequence of a circular letter sent round by the Council. A library committee has been appointed, and is proceeding with the formation of a list of standard works, which it will recommend to the Council for purchase. Daily attendance is given at the rooms of the Society, to accommodate those Fellows who may wish to consult such works as the Society already possesses.

In the prospectus which was issued immediately upon the formation of the Society, the circulation of an extensive list of queries was pointed out as one of the most effectual means of accumulating statistical information. This important requisite has not been neglected, but the preparation of such a list demands considerable time, and it is desirable that none should be issued with the sanction of the Society which has not received very mature consideration. An experiment has been made in the transmission of a circular form to a great number of savings banks, which is still in course of further circulation, in order to ascertain how far the Council may reckon on procuring direct communication by such means. It has been constructed on the model of a very full return sent to the Council from the Devon and Exeter Savings Bank, and, if extensively answered, will embody a great number of interesting particulars not given by the Government returns.

These particulars, with some other valuable papers already in the hands of the Council, will probably form part of a volume of transactions which it is the intention of the Council to prepare for publication, as soon as it has accumulated original materials of sufficient value. The sum of 100*l.* has been placed at the disposal of a publication committee, in order to defray the necessary expenses incident to that undertaking. In the meantime, it has been resolved to print, for the use of the Fellows, an abstract of the monthly proceedings and papers read to the Society, similar to those printed by many other scientific societies. These will commence from the first ordinary meeting, and will be distributed gratuitously to the Fellows. They will be sent round to all those who live in London and the immediate vicinity, and Fellows residing at a distance, may receive their copies on application at the rooms of the Society.

These abstracts will be printed from time to time, according to the number and value of the communications; their interest and importance will depend upon the exertions of the Fellows themselves; and the Council feel that they may confidently anticipate that these accounts will soon indicate, in a manner beyond dispute, the zeal, industry, and intelligence of those who contribute to fill their pages.

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